



Take Control of Your Network Destiny with the Athonet Mobile Core

1st March 2023

Athonet overview



Athonet

Founded in **2005**, Athonet is a provider of mobile core networks developed 100% in-house

Built from a vision :

“ Take back control of your network destiny with networks that are open and easy to deploy”

With one ambition :

“Break free of legacy and end-to-end lock-ins of Tier 1 vendors”



Hewlett Packard Enterprise

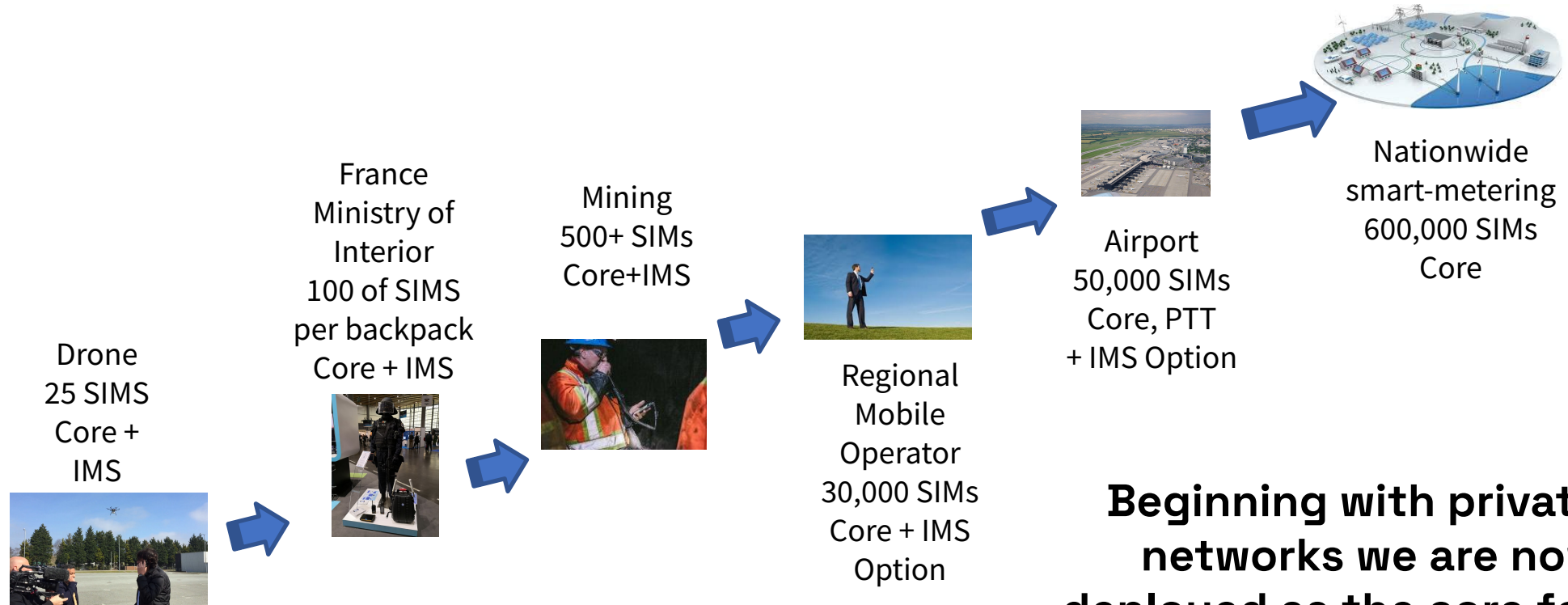
“With the acquisition of Athonet, HPE now has one of the most complete private 5G and Wi-Fi portfolios for CSP and enterprise customers – and we will offer it as a service through HPE GreenLake.”

Tom Craig, global vice president and general manager, Communications Technology Group at HPE

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field-proven scalability, mobility & reliability



Beginning with private networks we are now deployed as the core for public networks in the USA and Europe



The Mobile Core that works for you

Maturity

15+ years

100+ references

1000+ deployments

Openness

Any radio

Any cloud

Any application

Flexibility

On-prem

Private Public Hybrid clouds

Public Safety Tactical solutions

Beyond connectivity

An overall portfolio for MPN

Voice services

A control center to manage

Field Proven

Carrier grade

Usability

Deploy in 10+ minutes

Innovation

Best of breed user plane solution

with eBPF/XDP

An history of awards @MWC

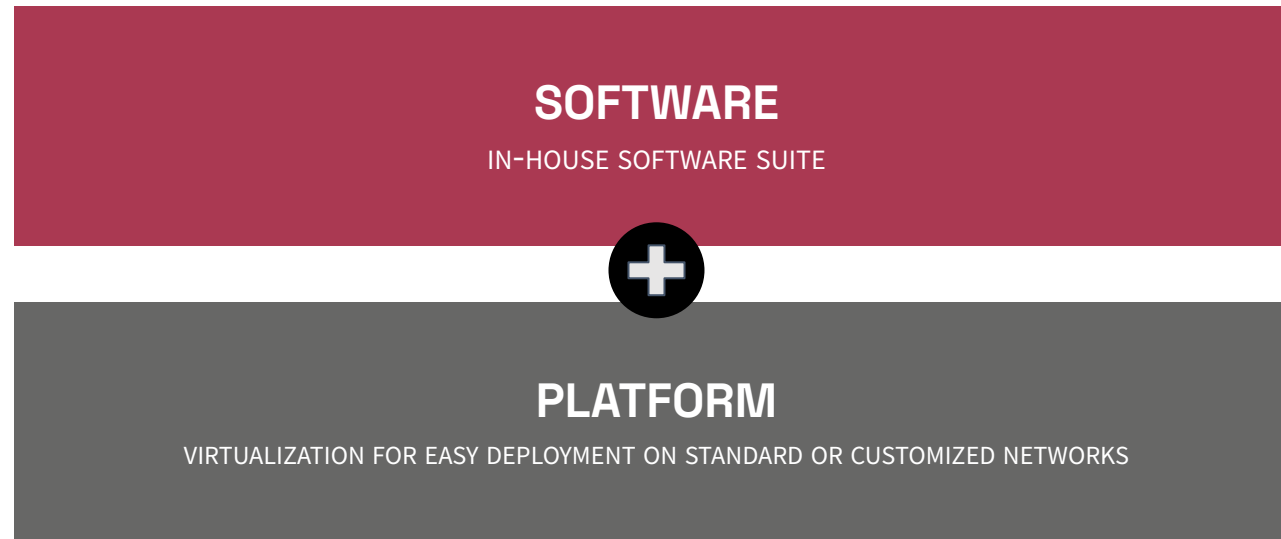
Private network architecture & product portfolio



Athonet product portfolio

From software to end to end solution

The same software is used from **25** to **1 Million** users with multiple hardware implementation options



FLEXIBILITY



PERFORMANCE



EASE OF USE



COMPETITIVE





Athonet software focus

Core Network, Services, Management

CORE NETWORK

EPC

Current release 11.4
MME, S/PGW, HSS, PCRF, CGF,
Web GUI, CSGN_NB-IOT, 5G
NSA, LI
Optional feature : eMBMS,

**5G
CN**

Current release 4.0
AMF, SMF, UPF, UDR/UDM,
AUSF, NRF, PCF, CHF, Web GUI

**COMBO
core**

Available beginning
of 2023

SERVICE

**IMS
VxLTE,
VxRR**

Current release 4.6
SBC, MRF, CSCF, BGCF, MMTEL-AS,
ConfAS, VMS, PSTN-GW, GMSC,
IBCF, Web GUI
Optional feature : SMS-C,

MCx

Fully integrated
Partners Solutions

SIM

Two solution
▪ Physical SIM
▪ eSIM solution

MANAGEMENT

DASHBOARD

- Auth & rights management
- Configuration management of the different nodes
- Users provisioning
- Supervision & Analysis of the network

CCS

- Backup of node
- Interface with ex-orchestrator (API)
- Configuration of node (API)
- Migration of resources between different nodes

**NETWORK
MANAGER**

- Fault Management
- Performance Monitoring
- Events and Log Analysis
- Traffic Usage Analysis

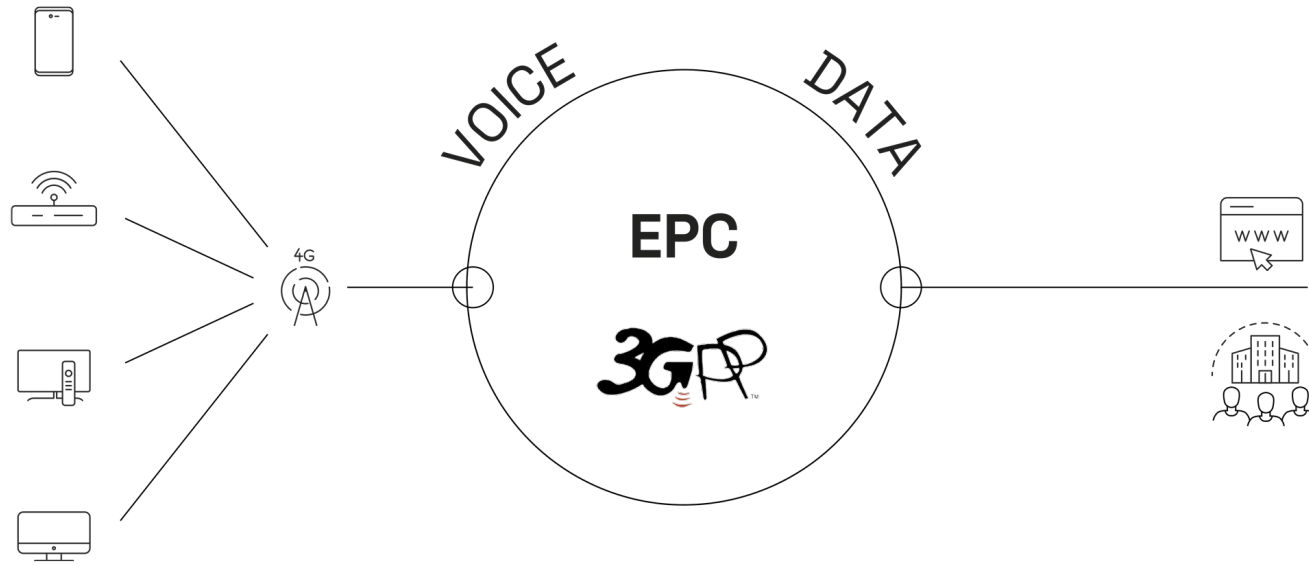




Athonet EPC

The world's most used mobile core

- 1 IP Multimedia System (IMS)
- 3 Mobility Management Entity (MME)
- 5 Policy & Charging Rules Function (PCRF)
- 7 Home Location Register (HLR)
- 9 LTE Broadcast (eMBMS)
- 11 APIs



- 2 Push-to-talk (PTT)
- 4 Serving/PDN Gateways (SGW/PGW)
- 6 Home Subscriber Server (HSS)
- 8 Voice-over-LTE (IMS for VoLTE)
- 10 Charging Gateway (CGW)
- 12 Network Management System



Fully On-site

Manage the entire infrastructure by running it on server(s) or private cloud completely in house



Fully Cloud

Manage and run your private network on public cloud environment and resources



Hosted solution

All the advantages of the cloud combined with complete visibility and full control guaranteed by the Athonet Connectivity Platform



Hybrid Cloud

Keep your traffic under control with an on prem solution while leaving the signaling component of the network on the public cloud



Extensive radio interoperability

5G-SA
& LTE/NSA



LTE/NSA
only



Test Core for ETSI
Plugfests since 2014



Full deployment model flexibility

**NETWORK
MANAGEMENT**

SERVICES

CORE NETWORK

RADIO NETWORK

CLOUD (FULL OR HYBRID) OR DATACENTER

Cloud & Hybrid



Google Cloud

Datacenter



ATHONET REFERENCE NETWORK DESIGN

Unified Network Platform



Single Server



Redundancy N+1
(incl. Geo-redundancy)

TRANSPORTABLE



BACKPACK 1
RT PROXIMITY
1 SECTOR 1W



BACKPACK 2
RT INTERVENTION
1 SECTOR 5W



CUBE
RT EVENT
3 SECTORS 20W



Provide Radio Package with Radio partner

Athonet & utilities



Utilities

Where the best wireless reliability and coverage is demanded, here we are.

Utilities deliver power to our homes or to our enterprises through a complex mechanism: there are smart meters measuring the amount of current that we use at home and give us the power; there is a distribution infrastructure; there are solar panels right on your homes, on the enterprises and the production area.

All of these three segments require communications: the Smart Meter requires communications to be able to control it, distribution infrastructure needs communications to ensure that the utility can fix faults and can react very rapidly to changes within the network.

Where the best wireless reliability and coverage is demanded, here we are.

Utilities

Main challenges they face

- Networks need to cover their entire service territories
- Millions of devices have to be connected
- Performance, low-latency and reliability

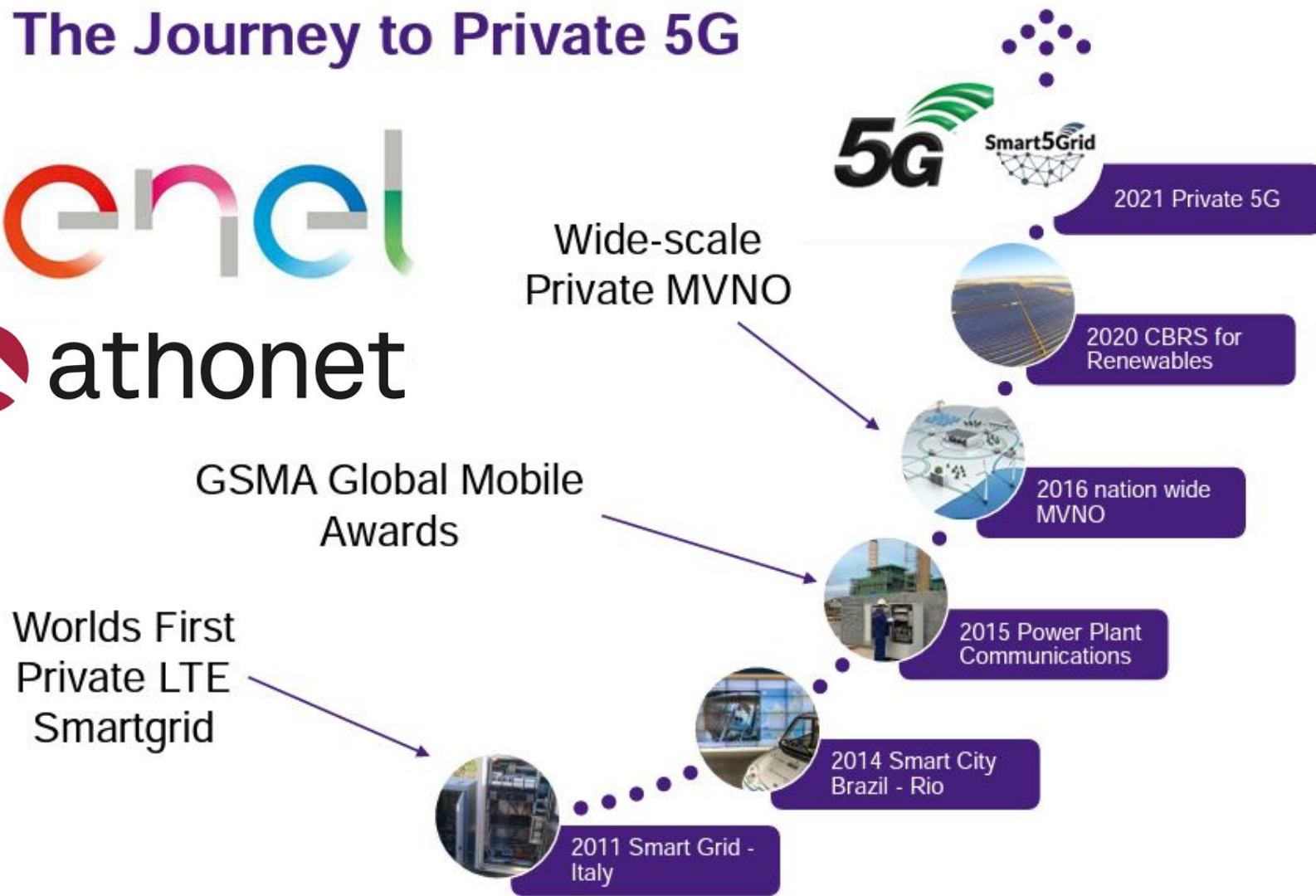
How we solve them

- Mobile intranet across any device
- Very low latency access to sensors, video cameras and LAN
- Integration with safety-at-work applications
- Fully integrated with utility ICT infrastructure & Enterprise-PBX
- Moreover it is affordable and with IT-friendly management

Utility references



The Journey to Private 5G



- Drivers**
- Growth in renewables
 - Distributed generation Demand-Response
 - Smart Grids
 - Smart Homes and Cities
 - Electric vehicles
 - Digitalization of construction
 - Digitalization of platforms
 - AI and Video

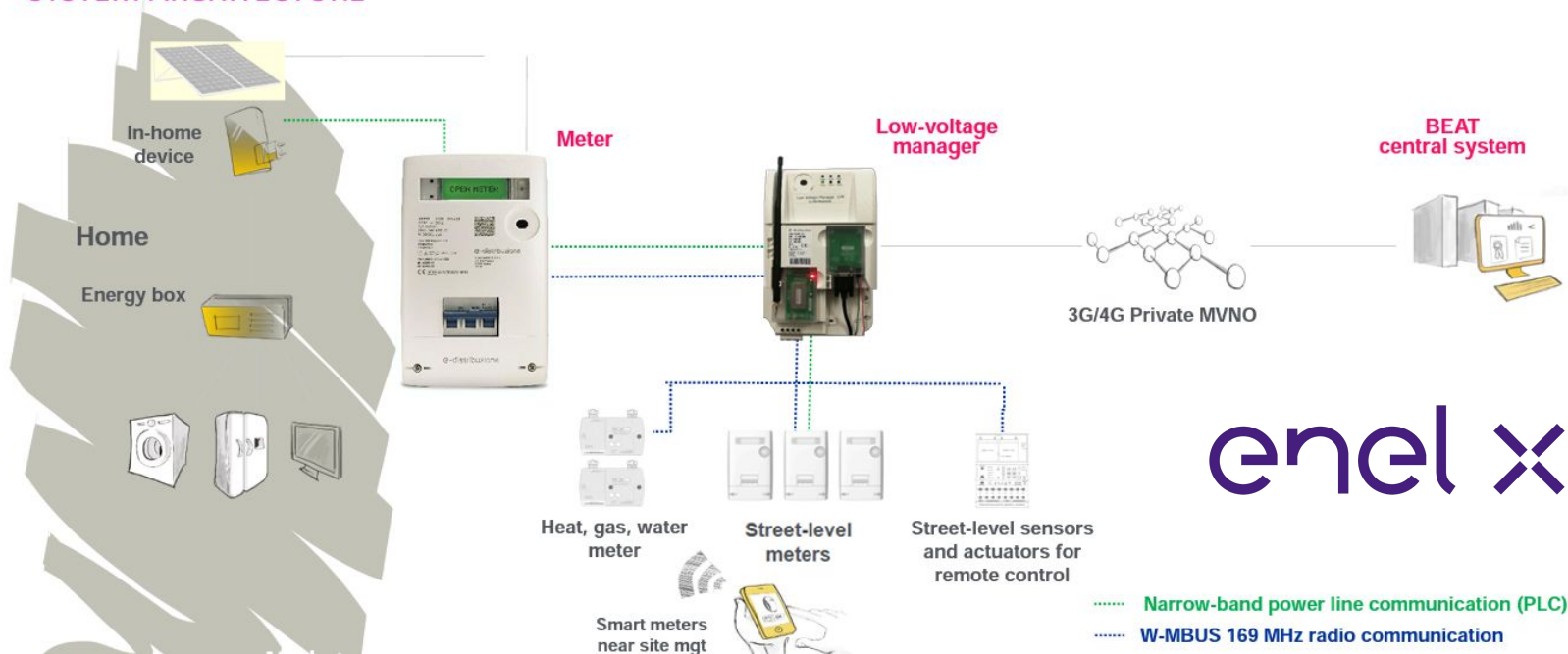
Reliable Comms is Critical to our Operations Private
 LTE & 5G gives us a new tool



Nationwide – MVNO rollout for IoT

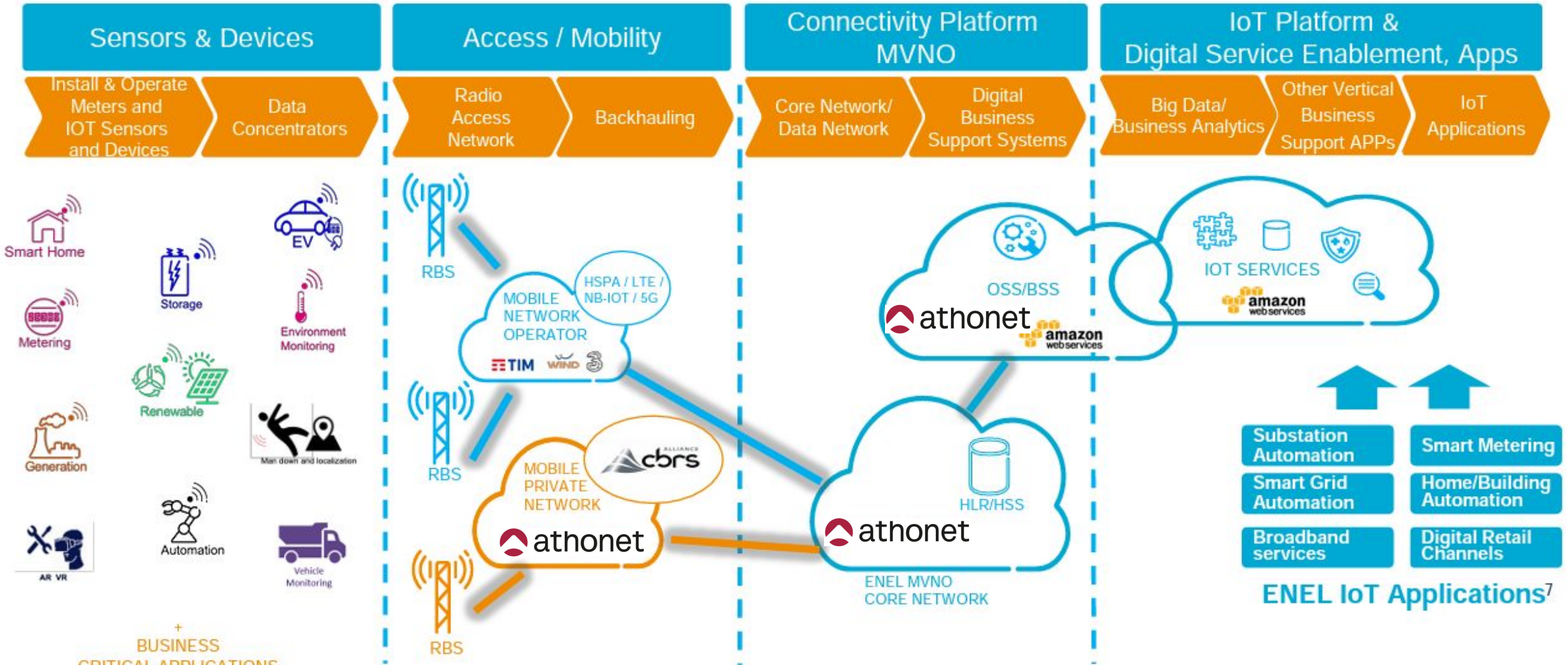
- **Requirement:** National coverage of c.30 million smart meters feeding back into 1 million LTE concentrators as well as substations, core power generation, and transmission infrastructure
- **Problem:** Conventional operator SIM approach was expensive and did not give customer the flexibility and visibility required
- **Solution:** Athonet enabled a private MVNO on a national operator's infrastructure with full integration into the enterprise ICT environment via Athonet's APIs
- **Benefit:** Enel obtained the desired visibility, flexibility, and coverage but with large cost savings compared to legacy SIM approach

SYSTEM ARCHITECTURE





Enel Mobile Architecture





Dogger Bank A - LTE & 5G PMN

660km² site with up to 277 turbines across 3 phases



Requirement

- MC-PTT
- Fixed CPE for SOV
- Upgradable to 5G
- IMS & PABX interconnect
- Local redundancy



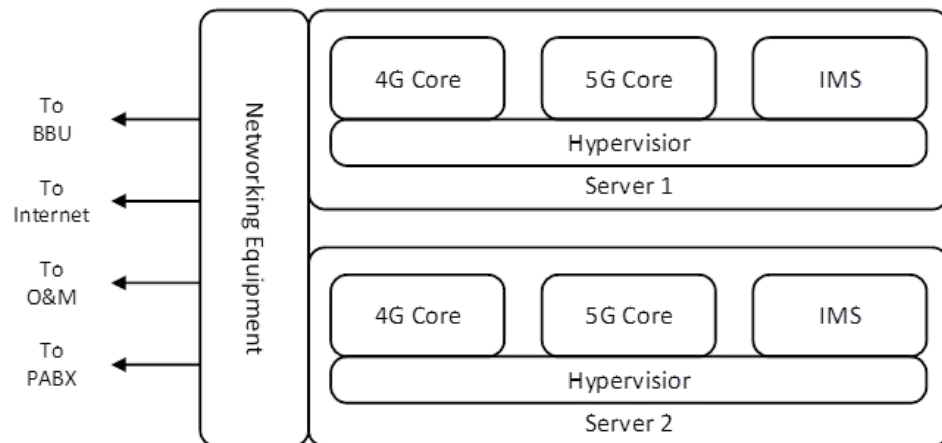
Problem

- Prioritised communications
- Data services for SOV



Solution

- Local redundant EPC/IMS
- Ericsson BBU/RU
- TASSTA MC-PTT



- EPC installed in a local redundancy configuration at wind farm offshore substation (OSS)
- The LTE radio system includes 4 sectors each including 2 RU's and 2 x BBU's operating in 700MHz and 1800 MHz from Ericsson
- RU's and BBU's installed on WTG



Smart5grid

7	24	3	3	3	15
countries	partners	network operators	power grid operators	academics	companies

- Automatic Power Distribution
- Grid Fault Detection
- Remote Inspection of Automatically Delimited Working Areas at Distribution Level
- Millisecond Level Precise Distribution Generation Control
- Real-time Wide Area Monitoring

Smart5Grid Involved Countries





[ATHONET VIDEO](#)



[ENEL VIDEO](#)



[ATHONET - 5G PRIVATE NETWORKS FOR UTILITIES](#)



[Smart5Grid](#)

